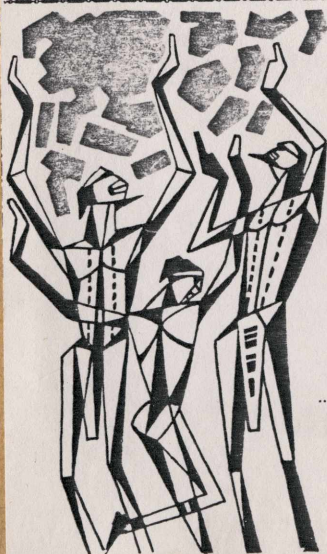


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**THE
INSIDE STORY OF SOME
QUEENSLAND VENTURES
AND
SOME NOTES ON THE
BRITISH AND AMERICAN
OIL INDUSTRY**

AN ADDRESS TO THE ROYAL GEOGRAPHICAL
SOCIETY OF AUSTRALASIA (QLD.) BY THE
HON. A. J. JONES, M.L.A.
(MINISTER FOR MINES)
VICE-PRESIDENT OF THE SOCIETY.



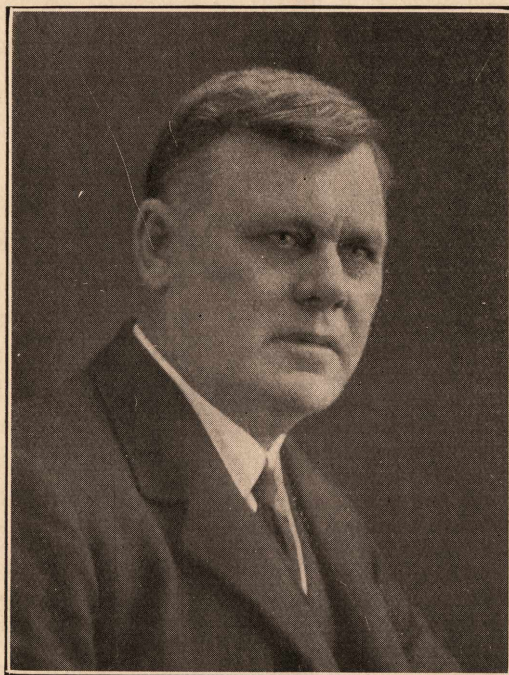
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Queensland's Oil Ventures

Their Inside Story, with Notes on the
British and American Oil Industry



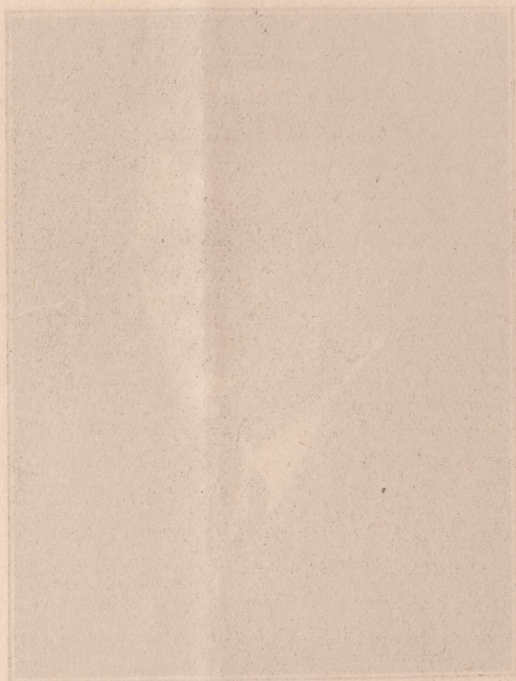
By Hon. A. J. JONES, M.L.A.
(Secretary for Mines)

A. J. CUMMING, Government Printer, Brisbane.

QUEENSLAND GOVERNMENT PRINTER
1924

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(Secretary for Mines)

A. J. CUMMING, Government Printer, Brisbane.



Queensland's Oil Ventures

Their Inside Story, with Notes on the British and American Oil Industry

Lecture under the auspices of the Royal Geographical Society of Australasia (Queensland), at Brisbane, on 9th May, 1927. His Grace Archbishop Duhig, D.D., F.R.G.S.A. (President), in the Chair.

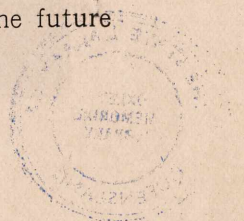
YOUR GRACE, LADIES, AND GENTLEMEN,—

In addressing you I shall endeavour to conform to the high objects of the Society, and to the high standard set by you, Mr. President, and by others who have lectured here.

I do not pretend to deal either scientifically or geologically with oil. It is the importance of the subject—the value and significance of the discovery of crude oil in Australia—which prompts me to accede to the request of the Council. My address this evening has for its title “The Inside Story of Queensland Oil Ventures, with Notes on British and American Oil Industry.”

Although I have given considerable study to the question of oil, and its many phases—geological, scientific, industrial, and economic—it is with great diffidence that I approach the subject. As a layman speaking in the presence of geologists and scientific men, I am aware of the many pitfalls confronting me; but as a layman I know there are differences of opinion amongst geologists and scientists regarding the origin of oil and its occurrence, differences regarding underground structures, and differences of opinion regarding the occurrence of gas as being indicative of an oil field. With these I shall deal later when referring to local conditions at Roma.

To the oil industry, more than to any other economic factor, belongs credit for the extensive development of transportation, which has figured so largely in the progress of all countries and particularly in the progress of vast countries like America and Australia. It is a truism that transportation forms the most effective element in the development of a country. Behind that truism can be found oil giving its dominating share to the advancement. One can readily visualise what oil discovery in the Commonwealth would mean to Australia, a country which in the future



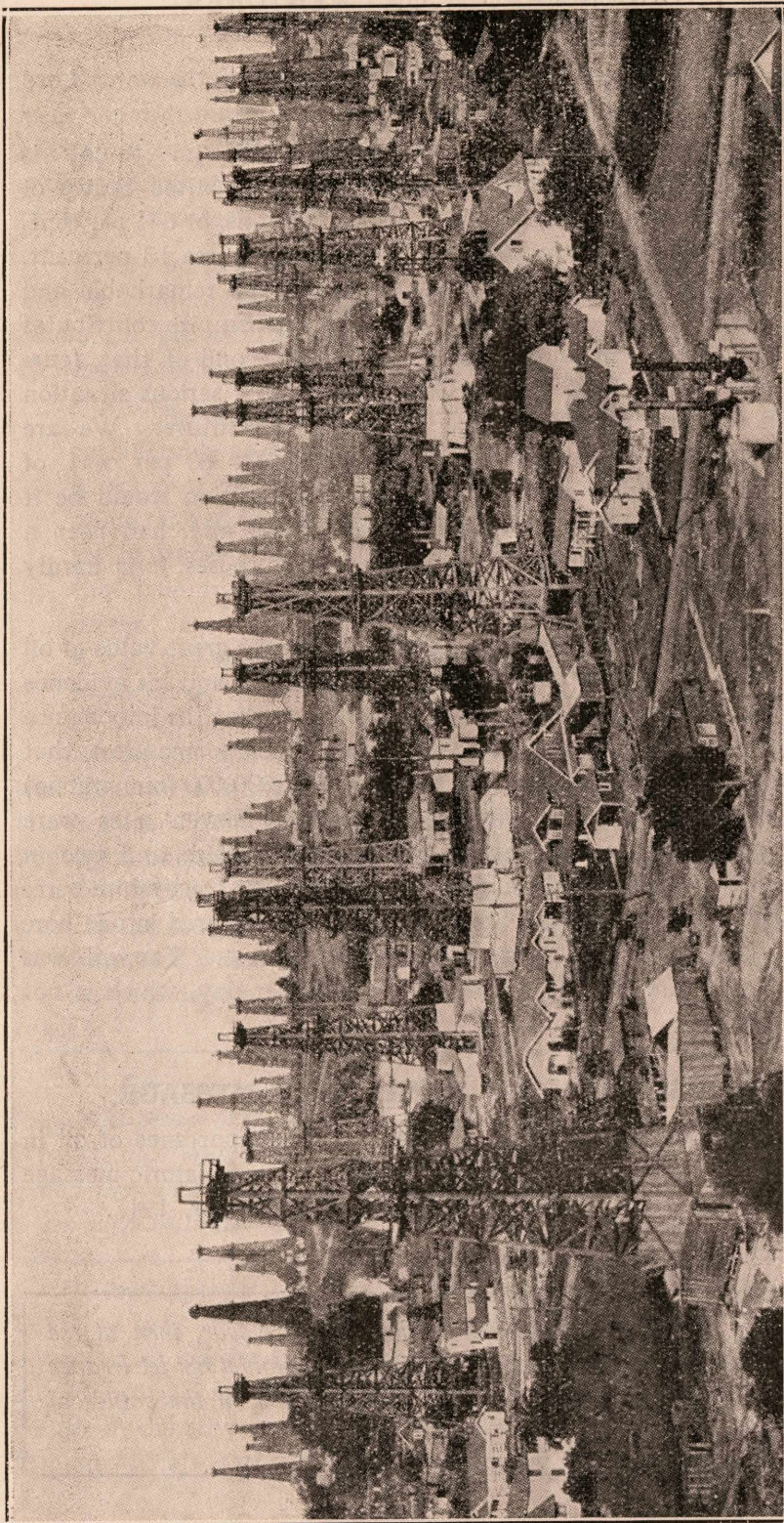
will depend so much upon air and automobile traffic. It is not altogether a divergence from the subject to express the opinion that we in Australia will have to consider the advocacy of good roads and oil-driven motor traffic as a means of opening up our lands, instead of the more costly and less paying steel rail method. This argument applies to the far West and the far North, where at the present time our population is sparse and where quick aerial transport has proved practicable and convenient. The argument is at least sufficiently sound until our country, and especially our back country, is more thickly populated.

LINCOLN LOGIC.

We can readily gauge the importance of oil to Australia when we realise that in the year 1922 we imported 76,496,487 gallons of oil, valued at £7,421,911. That stupendous figure was the importation price of the oil—the consumers of it, of course, would pay far more.

The equivalent in money and kind has to be sent out of Australia to pay for this commodity. That brings us back to the Lincoln logic :—" If we bring oil from oversea the oversea people have our money and we have the oil, but if we produce oil here we have the oil and the money too." Owing to rapidly increasing consumption, Australia annually imports many millions of gallons more than she imported in the year 1922. The value of our oil importation now has reached over £8,000,000 per year

Let me now refer to the national importance of oil—to the wisdom and necessity of giving every encouragement to those who are out to win it, or to bring it in, or to produce it, in British countries. I am an anti-war-ite, but I am compelled to the belief that a country's best protection lies in being possessed of all the essentials which help to win through in the event of hostile attack, and in being able fully to develop those essentials. Oil is one of those essentials ; yet during the great war which raged from 1914 until 1918, Great Britain and her dominions were responsible for only 2 per cent. of the world's total production. Lord Harcourt (then Chairman of the Mineral Resources Committee in England) in a very confidential document presented to the Imperial Conference in July, 1918, stressed this alarming fact during an early



WILL QUEENSLAND EVER PRESENT SUCH A SPECTACLE AS THIS ?
Section of Long Beach Field, One of the Most Prolific Oil-Producing Areas in the World.

stage and at a very serious and critical period of the war. Lord Harcourt said :—

“ The world's production of petroleum to-day is 70,500,000 tons, and of that amount the United States of America produce no less than 45,500,000 tons, or $64\frac{1}{2}$ per cent. of whole world production. Russia contributes 13 per cent. and Mexico 11 per cent., and—this is the remarkable and alarming fact—the whole of the British Empire contributes only 2 per cent. of the world's production, and of that, four-fifths comes from India. Gentlemen, it is a serious situation now, and it will become worse in the future. We are dependent to-day on the United States for 80 per cent. of our requirements of oil, and what our position would be if unhappily, America, instead of being an ally, had been a strict neutral withholding oil for war purposes, it is hardly necessary for me to describe.”

It was the war which impressed upon us the great value of oil as a fuel, and it was Lord Harcourt's statement, and his evidence given at the Imperial Conference, and the fact that the importance of the supply of oil during the war was made so manifest, that caused the British Government to allocate £1,000,000 (one million) for exploratory drilling in Great Britain. Eleven sites were selected—seven in Derbyshire, two in Staffordshire, and two in Scotland—and drilling commenced in 1918. The Derbyshire bores reached the carboniferous limestones, but oil appeared in one bore only—at Hardstoft—at a depth of 3,112 feet. The oil was paraffinoid and the yield was about 1 ton per day, which is not commercial.

“THE TIGER'S ” MEMORABLE MESSAGE.

If further argument were needed of the importance of oil in a national emergency, we certainly have it in the historic message Clemenceau sent to President Wilson in December, 1917.

This memorable message read :—

“ If the Allies do not wish to lose the war, then at the moment of the great German offensive they must not let France lack the petrol which is as necessary as blood in the battles of to-morrow.”

While not admitting that the shedding of blood is necessary in national disputes, it certainly proves the importance of oil to a nation or to allied nations when conflict does occur, and the country possessing it possesses one of the big essentials which go to ward off attack.

Before leaving the question of oil and its relation to world wars, it is interesting for me to state here that the analysis of the Roma gas proved the presence of helium in minute quantities. Professor Steele has this to say about it :—

“ The presence of helium, if demonstrated, would be of considerable scientific interest, and if it were present in any quantity it might ultimately prove of considerable economic value on account of its value as a non-inflammable substitute for hydrogen for the filling of balloons and airships. I find that helium is present, but in minute quantities. There is present less than one part of helium in 12,000 parts of gas—a quantity which is too small to be of any practical value or importance.”

During the war the weak point in many an attack in the air was found to be in the inflammability of the hydrogen contained in the airships. Helium being a non-inflammable gas, not as light as hydrogen, but almost so, and sufficiently light to replace hydrogen as a lifting power, the United States Government reserved to that country the absolute right of helium and its uses. The Queensland Petroleum Act, which I had the honour to submit to our Parliament, also reserves helium to the Crown. Part of Clause 44 of that Act reads :—

“ The right to all helium found in association with petroleum and the power of the Governor in Council from time to time to make such provisions by Order in Council as he deems proper and just with respect to recovery, purification, and utilisation of all such helium.”

It may appear that I have stressed the use of oil in warfare, but I do so in order to emphasise its importance, rather than to advocate its use for that purpose. I voice the fervent prayer of all of us when I say that the best use it can be put to in the future will be in the advancement of commerce and for enjoyable flights through the air, rather than in endangering flights in the air.

NATURE'S GREAT GIFT.

Heavy oils for fuel to control the seas, highly refined oil for the conquest of the air, and illuminating and lubricating oils for our everyday needs, certainly impress one with the importance of this factor in civilisation, and the country is indeed fortunate which contains an underground storage of this great gift of Nature. Consequently any indication which does obtain here in Australia should be thoroughly and scientifically investigated. I do claim that the evidence we have in this State, warrants, after some investigation, the operations now being carried out at Roma with a view of tapping a supply in commercial quantities.

This brings me to the probability of crude oil discovery in Australia and the story of our prospecting activities at Roma. The bores other than at Roma, Orallo, and Longreach, from which small quantities of oil and gas have been authentically reported to the Mines Department after geological examination, are :—

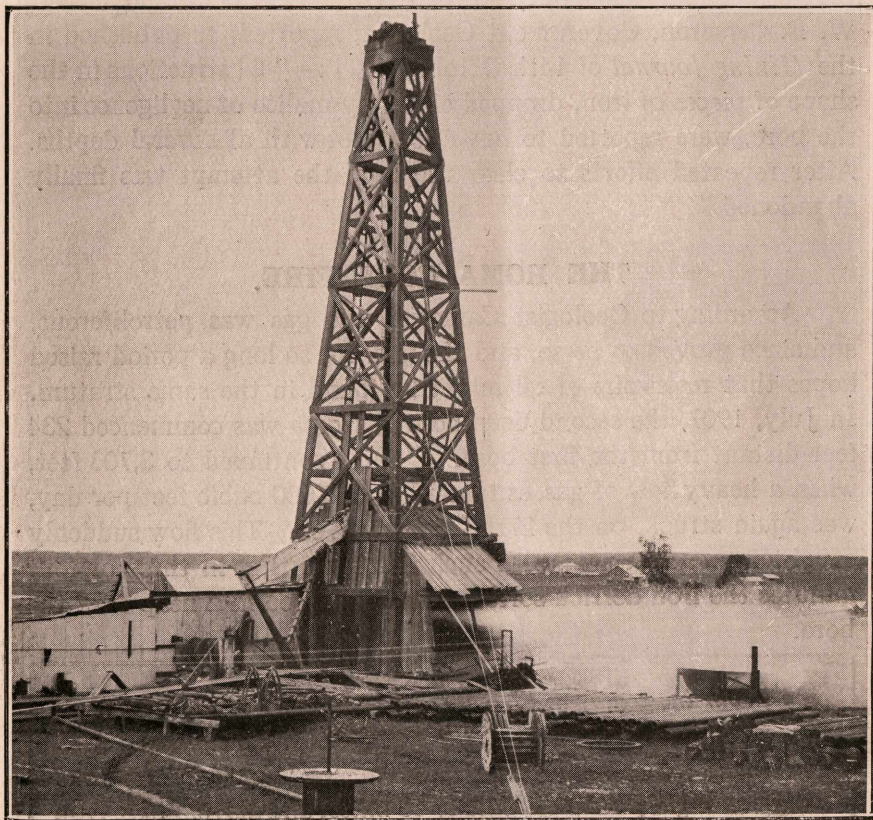
1. The Springleigh bore, 7,009 ft. deep (over a mile and a quarter deep, which, by the way, is the second deepest bore in the world). This bore was commenced as a water bore, but continued by the owner, Mr. J. H. Hart, for scientific purposes. According to investigation by Dr. Jensen, oil was met with in many places from 5,347 ft. down. It was black, heavy, tarry oil, a residual oil indicating proximity to the edge of the basin.
2. The Thornleigh bore. In this bore oil fractions came up with the artesian water.
3. The Bimerah bore. This gave little water and yielded a small quantity of petroleum at 3,640 ft.
4. The Claverton bore, which yielded a little gas.
5. The Ruthven bore, which yielded both natural gas and a little paraffin wax.
6. The Eromanga bore, which yielded some inflammable gas.

When at Eromanga some few years ago I was told of this phenomenon, and in the stillness of the night, accompanied by the whole male population of the little town, which numbered about twelve, and members of my party, we shut off the slight breeze

which prevailed and lit the gas, which gave a flame about 2 ft. high.

Speaking of this later, an oil expert in America remarked:—"You sure took a mighty big risk of a short cut to heaven."

The first bore at Roma was sunk to a depth of 3,707 ft. under the supervision of Mr. J. B. Henderson, Hydraulic Engineer, on



THE GAS FLOW AT ROMA BORE.

View of derrick with gas and water in spray, shooting out from 6-in. gate valve. Pressure behind valve when view was taken, about 25 lb. per square inch; water discharge, about 100,000 gallons per 24 hours.

behalf of the Roma Town Council, in an attempt to increase the supply of artesian water for the town, and gas was struck on the 16th October, 1900. The gas flow from this bore when struck was

70,000 cubic feet per day, and it was allowed to waste freely for $4\frac{1}{2}$ years. In February, 1904, the gas was again measured with a view of supplying the town, and showed a flow of 72,264 cubic feet in twenty-four hours. In June, 1906, the town was reticulated and the streets lit with gas. The plant, after running successfully for a few days, was handed over to the Municipal Authority on the 6th June, 1906, and householders were preparing to reticulate their houses. Roma was lit by natural gas for ten days, or, to be more correct, for ten nights, when on the night of the 16th June, 1906, the gas suddenly gave out and the town was left in darkness. Mr. W. E. Cameron, Government Geologist, reported, as published in the *Mining Journal* of 14th October, 1911:—"Obstructions in the shape of pieces of iron, dropped either by malice or negligence into the bore, were reported to have been met with at several depths. After repeated efforts to clear the bore the attempt was finally abandoned."

THE ROMA BORE FIRE.

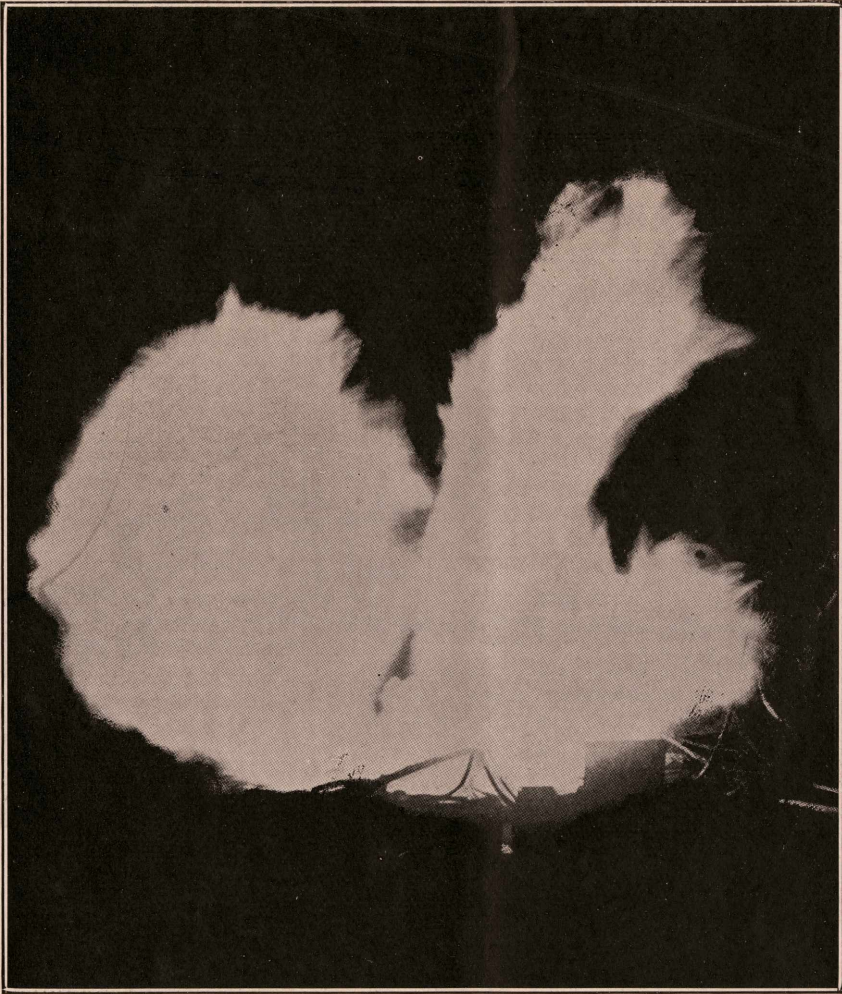
According to Geologist Cameron, the gas was petroliferous, and since proved to be so, and the flow for so long a period raised hopes that reservoirs of oil might be found in the same stratum. In July, 1907, the second deep bore at Roma was commenced 234 feet distant from the first bore. Drilling continued to 3,703 feet, when a heavy flow of gas, estimated at 250,000 cubic feet per day, was again struck, on the 27th October, 1908. This flow suddenly caught fire and burned with such fierceness that in three or four minutes the iron derrick softened and collapsed in a heap over the bore.

From the outbreak of the fire on the 27th of October until it was extinguished on the 12th December of the same year, the wild sea of flame continued to belch forth, and the reflection was visible at night from a distance of 40 miles, and the roar of the fire was heard miles away.

After the fire was put out, the flow of gas had considerable force, and while efforts were being made to remove the casing in order to replace the damaged top lengths, the gas suddenly ceased altogether.

In 1914 the Queensland Government, under Premier Denham, brought out from America a complete cable drilling plant, and with

it an American driller. The plant was large and considered up-to-date at that time. The hole diameter at the commencement was $15\frac{1}{2}$ in. The progress, however, was slow—so slow that it was four years after the commencement that the bore reached the interesting



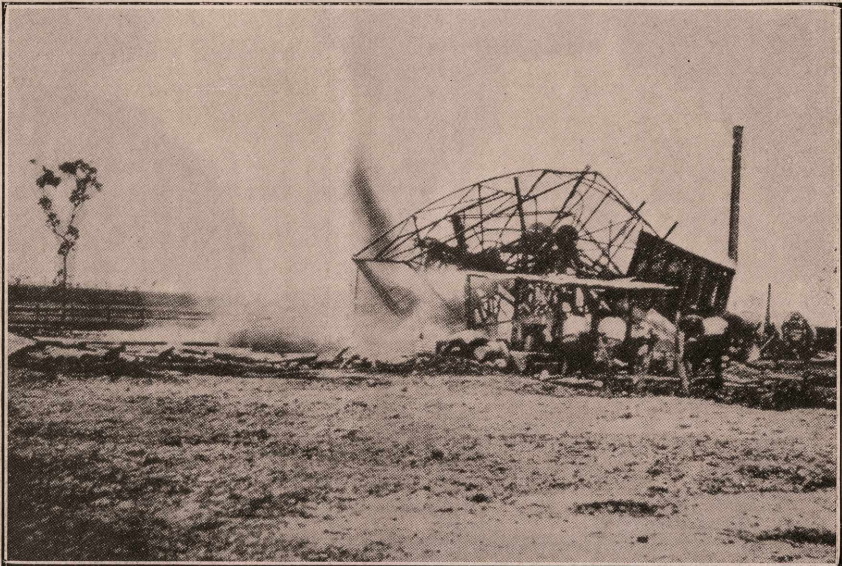
[Holloway, photo.]

ROMA BORE FIRE BY NIGHT.

View taken shortly after Fire broke out.

depth of 3,707 ft., at which depth the accident happened which left the bit and a string of jarring tools, weighing 2 tons 15 cwt. at the bottom of the well. It is not a strange coincidence that the three happenings to the three wells occurred at the following

depths of the respective wells—3,707, 3,709, and 3,705 ft. Since the year 1914, the year the Government bore was started at Roma there has been rapid advancement in drilling operations. The bore at Roma, which took over four years to reach a depth of 3,700 ft., and which started with a 15½-in. diameter, can now be completed within four or five months with a rotary drill, starting with a hole 16 in. in diameter. As a matter of fact, the Roma Oil Corporation's well was started on the 12th February of this year, and is now down over 2,500 ft., the diameter being 16 in. With a rotary plant, exactly like the one now in use at Roma, the Review No. 1 well, Signal Hill, California, working three shifts per day with five men on each shift, was drilled 4,100 ft. in 33 days, and the well was



MINERAL OIL COMPANY'S BORE AT ROMA [Photo., G. Pittman.]

View taken within half-an-hour of Ignition of Gas, and just after Collapse of Derrick.

put on a production basis 59 days after the starting of the building of the rig. This I believe establishes a record, or so I was told while writing the figures in my pocket-book, leaning Australian-like against the rig at Signal Hill during my visit to America in 1924.

After the smash at the Government bore at Roma, Mr. Arthur Moore, a reliable and reputable Australian, was employed, and he made several attempts to recover the lost tools and remove the obstruction. He then attempted to side-track them or drill past

them, and, of course, was not successful. In fairness to Mr. Moore it should be said, however, that the task set him was an impossible one, and that he proved its impossibility. In his attempt, however, to drill past the obstruction he liberated again the gas flow and to a much greater extent than previously. The flow was over 20,000,000 cubic ft. per day, and this enormous quantity escaping through an 8-inch pipe could be heard 5 miles away, and the smell of oil was quite pronounced. After some difficulty the gas was harnessed, and, with a small absorption plant, was proven petroliferous, yielding slightly over one pint of petrol per 1,000 cubic ft. of gas. This test was carried out in 1920 by Government Analyst Henderson, Professor Steele, and Geologist Cameron. The following is an extract from Mr. Henderson's report on the extraction of petrol from the Roma bore gas, September, 1920 :—

“ There are therefore at least 150 gallons of petrol obtainable from every 1,000,000 cubic ft. of gas.

“ ^{TWENTY} Two million cubic ft. per day could easily be obtained, giving a yield of 3,000 gallons of petrol per day.

“ At, say, 3s. per gallon that would mean a gross income of over £400 per day.

“ The plant required is comparatively not costly, while the labour costs are relatively very low.

“ It paid in America in 1915 to extract petrol when it was present in the proportion of 125 gallons per 1,000,000 cubic feet, with petrol costing about 5d. per gallon.”

ENORMOUS GAS PRESSURE.

Suddenly the great gas pressure in the Roma bore forced the broken tools up in the casing in the well a distance of 400 ft., and there they remain obstructing the gas or anything else that may seek its way to the surface through high underground pressure.

This well, which cost £36,000, now supplies the Railway Department with water, and was sold to that Department for £600. It has yet to be learned whether the information, experience, and geological data gained in this venture is truly represented in the balance.

The largest gas well on record was brought in in America, being the Hay No. 7 well. This well, blowing at an estimated rate

of 19,000,000 cubic ft. per day, caught alight, and for several weeks all efforts to extinguish the fire were in vain. Eventually, by exploding a heavy charge of dynamite drawn over the well by means of a cable, the flame was put out. For nearly a year this well produced 30,000,000 cubic ft. per day, and since has been maintaining a flow of half that amount per day.

Apart from the value of the petrol which may be absorbed from the gas at Roma, its introduction for industrial and domestic purposes should be considered, especially as the extraction of the petrol will not destroy its lighting power. In 1913 the Midway Gas Company built a 12-inch pipe line from Taft to Los Angeles, a distance of 110 miles, and Los Angeles to-day uses many millions of feet of natural gas per day. With this cheap and efficient fuel many industries have been developed in that country which probably would not have been located there without a natural gas supply.

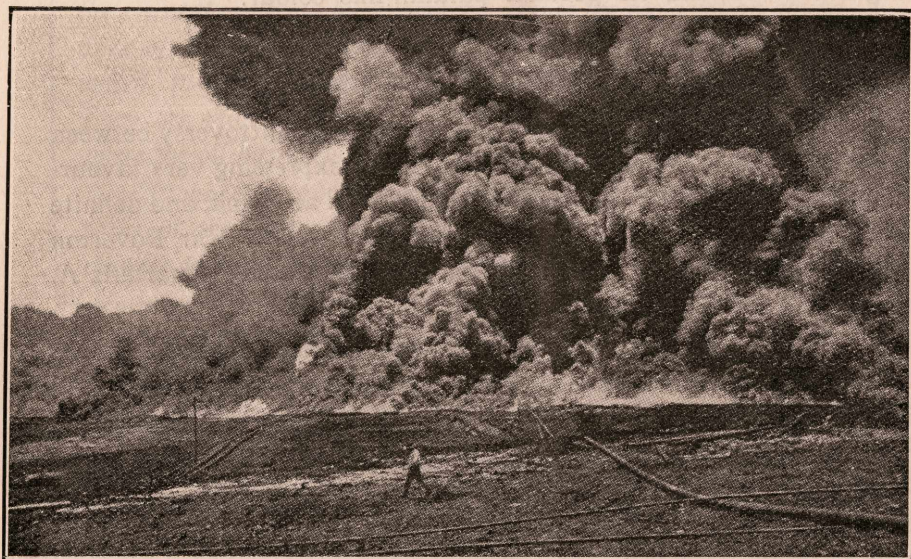
Within a month or six weeks it should be known whether or not the new well at Roma will again tap the big gas flow. Considering large flows were obtained in the three previous bores, and that the one now going down is within 7 chains of the big-flow bore, the chances are indeed bright for at least another large flow of gas. I would say when that does occur the Corporation will need to consider whether they will utilise the gas and sink another deep bore, for oil, or whether they will risk losing the gas flow by shutting it off and drilling deeper for oil in the same well. The expressed opinions which I shall read will make it very tempting to go on for oil after striking the gas. Mr. W. E. Cameron, the Government Geologist, said :—

“ My conclusion is that the possibilities of there being oil in the beds below the neighbourhood of Roma are considerable. The overflow of gas met with in the two Roma bores may be taken as evidence that hydrocarbon-forming agencies of some magnitude existed in more or less proximity to the strata in which the gas was found, though they are not evidence of the existence of oil in commercial quantities immediately below the situation of the bores. As is well known, every oil well is to a greater or less extent a gas well, and large gas wells are seldom remote from oil.”

This report by Mr. Cameron was in 1920 and prior to the big flow of gas in the No. 3 Roma bore.

Mr. B. J. Weger, an oil expert, wrote :—

“ It is my opinion that had the bore been carried a few feet deeper a big flow of petroleum would have been struck. The analysis proves the gas is a production of petroleum gas and is not a coal gas. In making a survey of the Roma district I found fossils and conglomerates exactly like those found in California—a field which produces millions of gallons of oil per day. The strata passed through are similar to those of Californian oilfields.”



AN AMERICAN OIL WELL FIRE.

Mr. L. C. Ball, Deputy Chief Geologist, wrote in 1914 :—

“ After perusal of the various reports I am of opinion that a strong case can be made out for the sinking of a deep bore near those at Roma.”

Then, again, Dr. A. C. Veatch, Consulting Geologist to the Mexican Eagle Petroleum Co., and late of the United States Geological Survey, on the 26th November, 1912, wrote :—

“ I do not incline to the view that if gas were exhausted from the gas-yielding zone there is any great probability of its being followed by oil, and therefore believe that if oil is to be found it will be obtained by going deeper or by sinking in some

nearby place, indicated by structural conditions to be most favourable for the accumulation of petroleum. Without knowing the minor details of the local structural conditions, I should at first thought say, 'Go deeper.'"

As long ago as November, 1904, and again in 1911, Mr. Cameron, when in the Department, in reports to the Under Secretary for Mines advanced the opinion that the possibilities were in favour of the gas struck at Roma having been given off from oil. He based this opinion upon the large quantities of gas evolved and its peculiar paraffin-like colour.

AN INTERESTING CONTROVERSY.

There was much correspondence and some controversy between oil geologists of world-wide repute. Those expressing very favourable opinions regarding the possibilities of oil at Roma, and definite opinions that the gas was petroliferous, were:—Sir Boverton Redwood, Dr. A. C. Veatch, Wm. Hope Henderson, Charteris A. Stewart, and W. H. Dalton.

On the evidence and data supplied to them these scientists endorsed W. E. Cameron's views, which have since proved to be correct. They expressed regret that the distance prevented them from visiting the field. One geologist and only one (Mr. Carne of New South Wales) gave an opposite opinion—not on more intimate knowledge gained by a personal visit to Roma, but on the same information supplied to the oversea geologists who had gained their experience on the great oilfields of the world. I mention this fact to show that Mr. Carne had no advantage over the others by reason of personal investigation. He gave as the reason for his report five adverse indications, such as insignificant gas pressure, absence of folding of the beds, absence of sprays of light oil, and no traces of oil being found within 700 ft. of the surface. These adverse opinions were convincingly combated by Dr. Veatch in a memorandum dated November, 1913. Dr. Veatch said that similar conditions had been met with on proved oilfields. Since this interesting difference of opinion the gas in question has been proved to be petroliferous.

Later, after much geological examination and investigation, there are the favourable opinions of Mr. L. C. Ball, Deputy Chief

Geologist, on whose recommendation the present site at Roma for the No. 5 bore was chosen, and of Dr. Jensen. In a paper read before the Pan-Pacific Conference in August, 1923, by Dr. Jensen, we find this interesting paragraph :—

“ It is obvious that, geologically, Queensland bears the same relation to the Pacific Ocean as does the United States.

“ What has delayed the discovery of oil in Australia for so many years is, in my opinion, not the absence of oil, but the absence of oil seeps of such unmistakeable character as to strike the eye of the average bush worker. But to the geologist an abundance of oil seeps is, after all, merely evidence that the areas in which they occur constitute an oilfield approaching its end. They are most abundant in highly folded and faulty oil areas where the oil has ample avenues of escape.

“ It has been shown in this paper that Queensland possesses rocks of the right lithological nature and folded in the right manner to yield oilfields of great magnitude.”

In conclusion he said :—

“ The chances of finding oil pools in Queensland are far from gloomy.”

With regard to the absence of seepages of oil, Mr. Dunstan had this to say quite early in the controversy :—

“ It has often been contended that, with so many deep water bores, indications should have been noticed if oil existed in the large artesian basin of Western Queensland ; but as the gas zone in the Roma bore is far below the water zone, nearly all the bores for water have been too shallow to indicate the presence of oil if it existed. The undisturbed conditions of the Cretaceous and Jurassic strata in the artesian area must also be a factor for consideration, as the impermeability of the rocks, in preventing the upward leakage of water under pressure, would also prevent indications of oil appearing above the horizon at which the water occurs.”

I shall now quote one other opinion, which is from a report made privately by Mr. Robert W. Phelps (Petroleum Engineer, of California), dated April, 1923. This has not previously been

published, and I am privileged to-night to quote it. It coincides so completely with Mr. Cameron's previously expressed view that it is indeed interesting :—

Mr. Phelps said :—

“ From a careful perusal of the information at hand it is evident that there are numerous and important indications that petroleum exists in the region around Roma.”

“ The occurrence of the gas in the bores at Roma is of primary importance, as an indication of petroleum, in that it carries an appreciable amount of distillate. From the afore-discussed indications it is virtually proven that petroleum occurs in the area under study.”

Mr. Phelps further said :—

“ The petrolatum found in the Blackall-Barcaldine district and other mentioned districts is conclusive evidence of the presence of petroleum in strata in these neighbourhoods at some time.”

ACTIVITIES AT ORALLO.

The story of the operations of the Lander Oil Co. at Orallo is so well known to this audience and to the public that I shall not dwell on it. To express my opinion regarding the unfortunate circumstances surrounding them will serve no good purpose, nor will it aid in the bringing-in of oil. But it is just as well for me to mention that this courageous Australian company, with which I was closely associated as head of the Mines Department, spent upwards of £100,000 in the search for oil in the Maranoa basin on the machinery and in actual boring. It put down three wells to depths ranging from 2,600 ft. to 2,700 ft. There was, without doubt, evidence of oil at about 2,200 ft. in No. 1 bore, but unfortunately a test of the hole was rendered impossible, and it could not be said whether the oil occurred in payable or commercial quantity. I wish here to pay a tribute to a company which at all times conformed to the Act and conditions laid down. The Lander Oil Co. certainly made a valuable contribution to the geology of that part of the State and the stratigraphy of the area it held under lease.

The Roma Oil Corporation is now making a gallant effort at Roma. It is sinking a well 7 chains from the No. 4 bore which yielded the big flow of gas, and I am sure we all wish them success.

On the 19th February, 1925, I visited the town bore at Longreach. This bore at the time was being drilled by the Shire Council to provide a better water supply. At 2,470 ft. a supply of water was struck, but was considered to be insufficient, and the drilling was continued in the expectation of getting a larger supply.

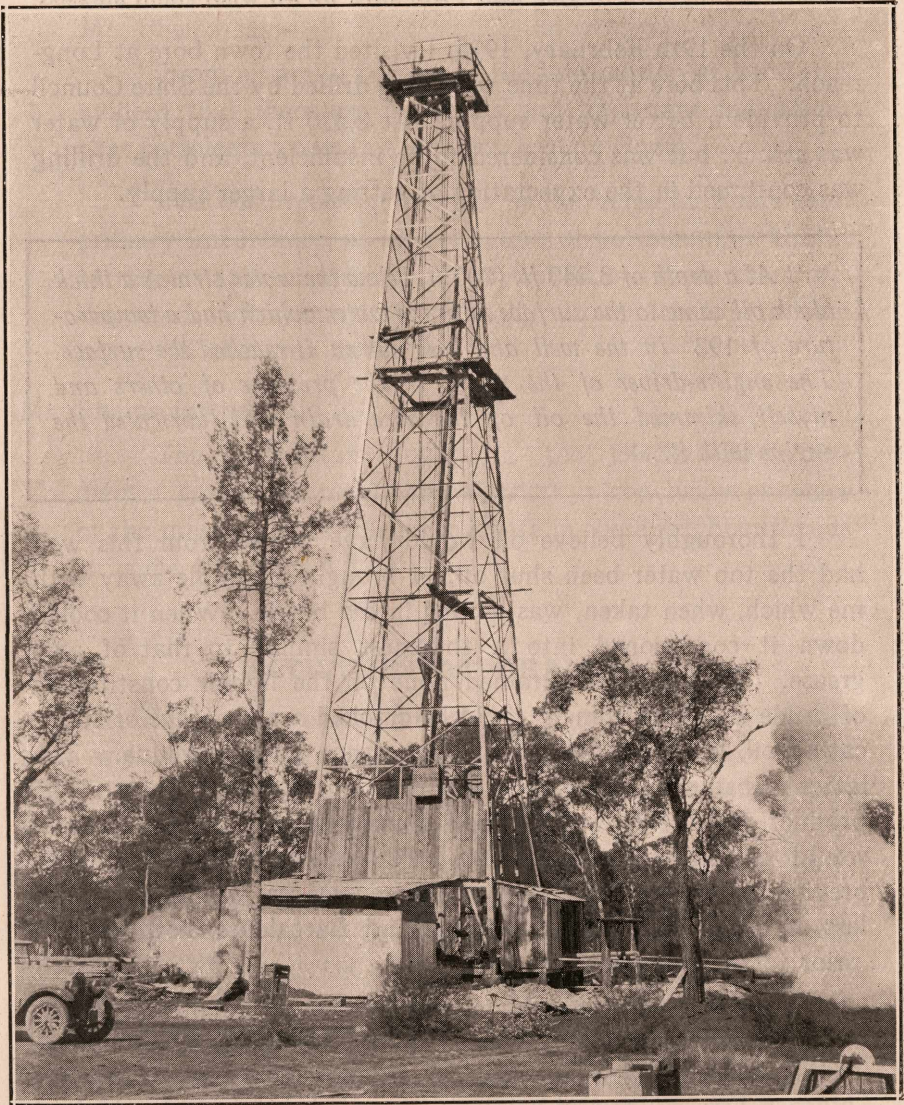
At a depth of 3,240 ft. (700 ft. below the water strata) a thick black oil came to the surface with the water, which had a temperature of 193° in the well and 160° when it reached the surface. The engine-driver of the plant, in the presence of others and myself, skimmed the oil off the bore drain and lubricated the engine with it.

I thoroughly believe oil would have flowed from this well had the top water been shut off. I brought a sample away with me which, when taken, was poured into a bottle. When it cooled down it conditioned into a thickness similar to that of axle grease. The sample contained none of the lighter constituents of crude oil, but from it could be cracked a percentage of lubricating oil, leaving a bituminous substance as the residue. The latter substance is suitable for road and street making. The product from this well is itself a residual oil, and in America would be termed "Petrolatum." R. W. Phelps, whom I have previously quoted, wrote, regarding occurrences, similar but much less in quantity, in the Blackall and Barcaldine districts, and prior to the Longreach find:—

"The petrolatum found in the Blackall-Barcaldine district and other mentioned districts is conclusive evidence of the presence of petroleum in strata in these neighbourhoods at one time. Petrolatum is a residue which remains after the oxidation of the more volatile compounds of petroleum."

I think all this goes to disprove the old speculation that Australia cannot, and does not, contain oil. I am simply giving these facts to show that oil, although not yet proved in commercial quantity, has been proved geologically and by actual findings.

and the occurrences at the places mentioned bring us much nearer the actual structures which should be tested by boring.



[P. Pring, Photo.]

PROSPECTING FOR OIL AT ORALLO, QUEENSLAND.

(The same plant is now being used by the Roma Oil Corporation).

On 3rd May last the latest investigation by Mr. Ball was placed before me, in which he reported the Government Analyst's

analysis of a sample from Westland, 54 miles south-west of Longreach. The sample is from a depth of 2,035 ft. and from a bore on Westland Station. The interesting paragraph reads :—

“ Sample 2035C was found to yield 20 per cent. of chloroform extract (a thick, heavy, dark-coloured mineral oil) which Mr. A. S. Hurworth definitely describes as free oil.”

Personally I rely on geological and scientific effort to discover oil, rather than on blind stabbing and the adoption of obscure and mysterious methods. The “ bringing-in ” of oil, when proved, is not as easy as is thought by the man in the street. To be successful the work must be entrusted to well-trained and experienced men. Merely drilling a hole on an oil dome or an anticlinal oil structure will not bring the oil to the surface. Underground structural conditions and underground water difficulties have to be understood. Apart from drilling the hole, the shutting off of water, underground cementing, and casing a well for oil recovery, is the work of highly skilled men. Oil prospecting is not a poor man's job, although the poor man may have the knowledge. Therefore money and knowledge are required—one is of little use without the other in the search for oil.

QUEENSLAND'S OIL LEGISLATION.

A word or two regarding oil legislation in this State will not be out of place. When I became Minister of Mines, oil had been declared the property of the Crown, and the only incentive for enterprising people to engage in its discovery was a Commonwealth reward of £10,000, since increased to £50,000. In 1918 I expressed the opinion that it would be better if the Commonwealth would spend £50,000 in the search for oil, paid by way of subsidy, rather than offer a reward which would not be needed by the discoverer. Eventually the reward was withdrawn, and the Commonwealth have recently subsidised operations in Queensland to the extent of about £16,000.

In 1920 an Act which I introduced was passed. It provided for taking up of leases, and also for a royalty to the Crown. Owing to the smallness of the area allowed, and with a desire to give greater encouragement to prospectors for oil, the Act was amended at my instigation in 1923. “ *The Petroleum Act of 1923* ” provides

for areas of 10,000 acres to be taken under permit, and the State is protected with a royalty of $12\frac{1}{2}$ per cent.

The Act, while safeguarding by way of adequate compensation the surface rights of private owners of land, is based on the sound principle that the greater underground wealth will take precedence over the lesser surface wealth or value.

The lesser value must always give way to the greater. In California valuable orchards and beautiful homes have given way to ugly oil derricks.

Signal Hill in California is studded with oil derricks, as thick as trees on an Australian forest hill. Most of them are drawing oil, either by voluntary flow or by pumping. The reason for this is the presence of so many privately-owned small residential areas. Heaven alone knows whose oil is being drawn. On that field there is much divided effort, and an American petroleum engineer told me the oil of Signal Hill field could be brought to the surface by one well for every eight or ten now operating.

Let me tell a story as it was told to me while motoring to Signal Hill from Los Angeles. A hard-working couple had saved up a few thousand dollars, and in the process of saving dreamed of a bungalow in California. For one hundred dollars they bought a small lot on Signal Hill, and built their modest dwelling. They planted trees and flowers and made their garden, and felt that at last they had reached their haven of content. About that time a typical oil developer drilled a wild-cat well next to their bungalow, and nearly drowned them with a gusher of oil. They had to take 50,000 dollars for their little allotment and bungalow. Cherishing the same dream of a bungalow in a garden of peace, they went far away to Santa Fe Springs. Here they purchased a small lot for a few dollars and built a better bungalow. Another aggressive promoter came along and drilled near them. Again they were forced out, carrying with them an additional 100,000-dollar sack. This time they thought they were playing safely when they went to Torrance, built another bungalow, and planted trees and flowers. Again oil drove them out, and they were forced to take 200,000 dollars. When the story was told to me they were living in a suite of rooms at the Ambassadors Hotel. A sad story but by no means incredulous, judging by the number of homes that have been

demolished by oil, and how much surface beauty has been forced to give way to the valuable black, dirty, ugly oil in that country.

I have told you of the genuine efforts of the Lander Co. and the Roma Oil Corporation. It is pleasing to note, too, that prospects are bright with the Oriomo Company operating in Papua, about 120 miles from Cape York. This company has drilled to a depth of 1,260 ft. under difficulties with an obsolete plant which could not go deeper. The hole has disclosed paraffin wax with showings of oil. Geologically the position of this field is right. In passing I shall mention an important point. The Queensland Act is so framed that it gives the Minister power to have a geological examination of the areas applied for. If they do not cover strata favourable for oil, the applications are promptly refused. This is a great safeguard for the public.

If oil has not yet been proved in commercial quantities in Australia, gas in large quantities has certainly been proved at Roma, and the question of its utilisation is a very important one. Because of the waste of natural gas in the American fields, its conservation attracted much attention in 1923. By reason of the smallness of the areas on Signal Hill, and because each fellow is trying to draw oil before the other fellow, an approximate loss of 175,000,000 cubic ft. a day is blown into the air. The magnitude of this may be more readily appreciated when considered in oil. Roughly estimated, the wastage in oil is 35,000 barrels of oil per day.

Seeing that the gas from the Roma No. 2 bore was allowed to waste for over four years at the rate of 39,411 cubic feet a day, one can easily calculate the wastage in oil. Since then, too, it must be remembered, a volume of gas of over 20,000,000 cubic ft. has been proved, so it augers well for the prospects of commercially using the gas at Roma.

In America a modest absorption plant can be purchased for 5,000 dollars, or slightly over £1,000. Since the great wastage of 1923 many absorption plants are used in the States, and the oil and gas are separated. The petroleum Midways Baldwin No. 1 well at Santa Fe Springs separates efficiently 16,000 barrels of oil from a large volume of gas in twenty-four hours.

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Although oil has been known to the world since the dawn of time, centuries rolled by before it acquired any real economic importance. Reference to it can be found in the Book of Genesis, and in the Book of Job it is mentioned that "Out of the rocks poured rivers of oil." The first revolutionary step in the use of oil was for lighting purposes.

It was not until recent years that the petroleum industry was regarded as one of the basic industries on which our future prosperity must depend, and this fact is exemplified in its rapid production and use. In 1857 the world's production was under 4,000 barrels, the United States of America contributing about half of that total. Last year the world's production was over 1,071,000,000 barrels. The average annual production for the past five years has been 1,042,000,000 barrels. The 1926 daily average for the whole year was 2,940,000 barrels, or 496,500 tons. The daily average production for America for the same year was 2,080,000 barrels, or 353,600 tons. It will be seen that America for the year 1926 produced 71 per cent. of the whole world production.

In the foregoing words I have endeavoured to emphasise the importance of oil and how significant its discovery in the Commonwealth will be to Australians. In conclusion I say:—If Great Britain were prompted to expend £1,000,000 in its search during the war period in countries where prospects were not very bright, how much more incumbent is it for her to expend a similar amount in times of peace in Australia, where there is overwhelming evidence of its existence!

A vote of thanks to the Minister was carried with acclamation on the motion of Professor H. C. Richards (Professor of Geology, Queensland University), seconded by Mr. B. Dunstan (Chief Government Geologist) and supported by Dr. H. I. Jensen and Mr. L. C. Ball, B.E.



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